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Of Floods and Droughts

The Economic and Financial Crisis of 2008

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Abstract

This paper provides an overview of the period prior to the recent global crisis, and the policies that were adopted around the world in response to the crisis. It highlights a number of key issues regarding economic and financial policies that governments have faced both globally and nationally. These are related to the management of boom and bust episodes that deserve more attention in policy circles in the future.

This paper—a product of the Growth and Crisis Unit, Thematic Learning Department of the World Bank Institute—is part of a larger effort in the department to share knowledge with policy makers and practitioners on Rethinking Development Policies in the aftermath of the global crisis. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at Rnallari@worldbank.org.

Of Floods and Droughts:

The economic and financial crisis of 2008[1]

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Introduction

At times, externalities resulting from the policies of large countries[2] have caused global markets to suffer various types of "shocks". 2008 and now 2009 have reminded us that what happens in large countries could have large impacts on the rest of the world. In 2007, the US accounted for 30% of world GDP, and 14% of world trade. US stock market capitalization was 145% of GDP with banks accounting for a quarter of the total stock market capitalization, and the ratio of domestic credit to the private sector at 210% of US GDP in 2007 (84 % of world GDP), was substantial. By comparison, credit to the private sector was 121% of GDP in the Euro area and 98% in East Asian countries in 2007. The US financial system had strong international links. The impact of the global crisis has been magnified for countries that are more globally integrated in goods, labor and capital markets. There have been a wide range of economic policy responses to manage the effects of the global economic and financial crisis on countries. Discussion regarding the various types of policies that countries should have adopted during the boom years of the 2000s and those that should be used to manage volatility and especially downturns are ongoing. International discussions have attempted to define global actions to encourage stability in global markets and to prevent future crises. For example, recent discussions on financial market regulation have explicitly considered how to enhance cross-border cooperation in order to promote financial stability. This paper presents some of the key policy questions raised regarding economic management during booms and busts and the responses of governments around the world to the 2008-2009 crisis.

The world's economic crisis follows a period of prosperity (as many crises have done) and increasing integration. The world economy grew at an average of 4.1% in real terms during

[2] Large countries are defined for this paper as countries accounting for a large share of world GDP (e.g. US, EU countries, and Japan), or are specialized centers of economic activity, or are financial hubs (e.g. UK), or suppliers or buyers of goods with market power (e.g. China, Saudi Arabia), or leaders in any other way. It could also refer to countries that are simply large relative to their most important economic partner.

2000-07 compared with 2.9% during 1990-99. Developing countries benefitted from the growing demand in higher income countries while themselves contributing more to world growth than in decades past. World trade grew at an average of 7.1% in real terms during 2000-07,[3] so that in 2007, world trade in goods and services was at 33% of world GDP compared to only 16% in 1990 and 25% in 2000.[4] While the rise of China, and to a lesser extent India, has provided alternative markets for the developing world, and in regions like East Asia, intra-regional trade accounts for a much larger share of total trade than it did decade ago, the US and European Monetary Union countries still accounted for 50 % of world trade in 2007. [5] [6] Moreover, a trade shock to one country, from say, US markets, could still be propagated widely to other trading partners, when *production* is internationally integrated.

World trade growth was accompanied by large cross-border flows of funds both in terms of *current* transfers (e.g., workers' remittances) as well as large capital account movements to fund national savings/investment imbalances. Remittances have boosted expenditures (and imports) in many developing countries rising from US$82.5 million in 2000 to US$ 199 million in 2005 to US$ 334 in 2008. Capital account flows between countries responded to both "push" factors (excess savings looking for high returns/ portfolio diversification) and "pull" factors (such as reforms in the receiving country, changing consumption patterns, better investment opportunities, better financial intermediation and innovation). For most small developing countries that participate in international financial markets, push factors probably played an important role in the years leading up to 2008 when capital flows to all developing countries

[3] Computations based on the Oct 2009 WEO; world trade grew only 0.3% in volume terms in 2001. In 2008 world trade and growth both were 3%, though world trade has grown faster on average.

[4] Trade grew in HICs at 13.1% during 2000-07 compared to 5.% during 1990-99, while trade in MICs and LICs recorded a growth of around 23% each during 2000-07 compared with 4.9% and 11.3% respectively during 1990-99.

[5] That proportion was 44.72 % in 2000- IMF Direction of Trade Statistics, Dec 2009.

[6] Brülhart and Thorpe (2000) observe important and similar development levels in selected east-Asian countries trade along with substantial growing static and marginal intra-industry trade in each case. They also find the changing structure of East Asian trade patterns to be explained by fewer labor adjustment pressures.

increased. Net capital flows to emerging and developing economies was around US$65 billion during 1999-2002, rose to US$ 201 billion in 2004 and to US$ 617.5 billion in 2007.

The commodity price "crisis". The volatility and crisis of the latter half of the 2000s had their roots in this prosperity and interconnectedness. Growth in real incomes around the world led to continuous price increases in commodities. A "crisis" of sorts took place during mid-2007-mid-2008 when food and fuel prices, which had been increasing fast since 2005, both jumped up substantially.[7] The commodity price hikes in world markets are noteworthy for the distributional effects they had on world markets. As might be expected, oil exporters benefitted in the form of higher export revenues. In 2007, Kuwait had a current account surplus (CAS) of 44.7% of its GDP, Qatar of 30.4%, and Saudi Arabia, of 24.3% of its GDP while Russia's CAS was 6% of its GDP. While commodity exporters in the Africa, Latin America and Middle East and North Africa regions saw external positions improving many oil-importers saw a significant widening of their trade deficits (e.g. Ukraine, Mongolia, Seychelles, Dem. Rep. of Congo, and Togo among others). In addition, fiscal positions of many governments were changing along with commodity prices for a number of reasons: (i) governments that taxed fuel (or owned it) saw revenues rise; (ii) there were reductions in taxes and/or increases in subsidies for those who protected oil/food production or consumption; and (iii) governments put in place new subsidies to protect the poor. For those that suffered negative effects from rising prices, the median fiscal cost of subsides, tax decreases, and other fiscal responses to rising commodity prices was 0.6% of GDP in 2006 and 0.7% of GDP in 2007. The total fiscal cost of responding to commodity price shocks has been estimated at 2% of China's GDP, and over 3% of GDP for India. [8]

[7] The food price spike is explained to a large extent by a confluence of factors, namely the advent of US bio-fuel subsidies and poor wheat harvests in some major exporters. The concomitant jump in fuel prices has been explained by a number of reasons, such as low inventories reflecting high demand and insufficient investment in new refining capacity, and the high cost of new exploration and development.GEP 2009.

[8] IMF Update on Food and Fuel Prices dated September 19, 2008.

But the food and fuel price shocks, though the largest and most protracted since 1900 (GEP 2009) did not seem to have an appreciable effect on world growth, unlike the previous oil shocks. Several factors may explain this: the compensatory effect of other commodity price increases for several importing countries, a decline in fuel intensity in the world due to technological factors[9], a decline in the fuel needs of the developed world as they have moved away to service- led economies, and perhaps a substitution away from fuel as a response to rising prices over time. *In addition*, monetary policy in the advanced countries was accommodating, contrasting with the contractionary policies of the previous period aimed at fighting inflation. While all the above factors contributed to resilience in world growth, it is possible that had the increase been sustained for a longer period there would have been negative effects on growth, particularly in some emerging markets, and particularly if tighter monetary policy had eventually been adopted to contain inflationary pressures. Recent estimates from FAO suggest that the post-crisis scenario for food prices does not augur well for developing country food importers as they are projected to rise again when the global downturn ends.[10] Commodity price developments remain a source of volatility in world markets.

A striking difference between booms in "real" factors as opposed to the booms in financial markets is that finance is "all pervasive" and the magnitude and swiftness with which a shock can spread is markedly higher. Every sector of the economy depends on the financial sector for transactions across space and time; the more developed the country, the more this tends to be the case. The very role of finance is to provide links between activities (intermediation) where none would have existed through the production or consumption process. Second, the financial sector is notable for the speed with which changes in prices can occur.

[9] OECD oil-intensity, defined as million barrels a day consumed as a proportion of GDP, decreased from 1.07 during 1977-80 to 0.57 during 2004-06

[10] FAO's latest Food Outlook suggests that the index of food prices climbed to 168 points in Nov 2009, the highest level since Sept. 2008. This is 21% below the peak in June 2008 but prior to 2007-2008; this index had never exceeded 120 and had usually been below 100.

This is partly because the costs of buying and selling financial assets are low and prices correspondingly flexible: sellers can exit quickly and buyers can enter quickly. Third, financial sector developments can have a substantial and swift affect on expectations regarding the evolution of both individual and corporate wealth and the intertemporal evolution of national output. Finally, the financial sector seems to be especially prone to the effects of "animal spirits".

Though the crisis of 2007-2008 started in the US, it was soon rippling across borders. Its real effects, first transmitted through the financial system and then through the collapse of trade, commodity prices and remittances meant not only a US GDP growth slowdown for 2008 (growth was only 0.4%) and the EU (at 0.7%) but also a downturn of -2.7% and -4.2% respectively in 2009. For many *developing* countries, the growth slowdown of 2008 is predicted to be a growth downturn in 2009 and a slow recovery in 2010.

The paper examines the proximate "causes" of the crisis, fiscal, financial, and monetary policies leading up to the bust, and policies that have been put in place to manage the crisis in both developing and developed countries. The first section covers the period before the crisis, the second section the crisis and the third section reviews the policies adopted and ongoing debates.

I. The Triple "Causes" of the Crisis: Structural Imbalances, Macroeconomic and Financial Policies

I.1. Structural Imbalances and Macroeconomic Policies

For several years now the global economy has been characterized as suffering from "structural imbalances" or "excessively" high spending in some countries balanced by high savings in others. The world distribution of borrowers and savers is distinguished by peaks- that is, there is a handful of countries accounting for a large proportion of the world's savings and a

handful of large borrowers (in terms of world markets)[11] Around the world, there are fewer countries that have a CAS instead of a CAD. Figure 1a and b show some of the large deficit and surplus countries with the CAD or CAS in terms of both own and world GDP. In terms of world GDP the US CAD was at -1.6% in 2006, absorbing more than the surpluses of the Middle East countries and China. As shown in Tables 1a and 1c, in 2007 (and particularly in 2008), the US CAD fell as a share of world GDP (and as a share of total CASes**)** while China's share of the world surplus (relative to world GDP) increased over time (0.7% in 2007) as did the Middle East's in 2008 (0.7%).[12] The US has been taking a smaller share of the world's savings in the last few years (though the absolute value of the CAD in billions of dollars has been increasing). Among developing countries, the Eastern European CAD as a share of regional GDP was by far the highest at 8% in 2007 and 2008. The newly industrialized economies of East Asia by contrast had a CAS of 5.7% of regional GDP, and the ASEAN-5, of 5% as shown in Table 1b.

Developing country CADs were financed by a variety of flows (Figures 2a-2d). The lion's share of FDI has traditionally gone to countries in East Asia, levels rising even in 2008 and 2009 while falling in Eastern European and CIS countries. Net private flows have been the highest in emerging Europe since 2005 (and the CIS countries overtook East Asia too in 2006) followed by E. Asian and Latin American (Western Hemisphere) countries. Private *portfolio* inflows have been extremely volatile; the East Asia region has intermittently suffered some large withdrawals. Outflows of official capital were high in the period before the crisis, particularly from E Asia and Africa. The trend was reversed in 2008 and 2009 particularly for emerging Europe and CIS countries.

[11] When the current account balance is measured relative to GDP, the ranking of highest to least changes – some small countries have current account balances that are very large relative to their output but small relative to world markets. Alternative measures are discussed here.
[12] Edwards (2007), NBER on current account surpluses and the correction of global imbalances.

Pre-crisis, aggregate demand booms and corresponding current account deficits (CADs) have been associated with rising asset prices in many countries. Table 2a shows that almost every country, (except Denmark) that had housing price increases of 50% or more during 2002-06 had a large current account deficit with Iceland, Latvia and Lithuania being top contenders for the latter. Ukraine, South Africa, Latvia, Estonia and Lithuania stand out with housing price booms near or over 100% and large CADs. Germany and Japan had the largest housing price depreciations among the countries in the list and a large CAS, while China benefited from both a CAS (as a result of its export strategy) and a housing price appreciation that was relatively small (31%). The stock market booms in this period are evident from the value of the stocks traded/GDP which jumped in the US (86%), the UK (118%), East Asia (427%) and Eastern Europe (100%) between 2004-2007.

Asset price booms have been associated with fast domestic credit growth as witnessed in the US and several other countries, for example in Europe. Easy credit enhanced the incentives to borrow, increased investment in housing and as housing prices rose, consumers with higher wealth, raised spending. Rising prices in the US also facilitated further credit expansions in the form of home-equity loans. High credit growth to the private sector is reflected in the bank credit to GDP ratio which rose substantially in the US (especially in the latter part of the 2000s), the UK, in the countries of the ECA region (20 pp of GDP) and somewhat less in the Euro Area. In East Asia (especially China) it fell. In Latin America, credit to the private sector was at 38% of GDP, rising over 14pp of GDP from 2004 to 2008 but less than the ECA region.[13]

The nature of the aggregate demand boom may vary but many countries experienced investment booms in construction/real estate and with rising asset prices, fast consumption growth. Governments may choose to moderate or influence the direction that market participants

[13] The growth rate of credit was much higher as was the growth rate of GDP.

follow. US fiscal, financial and monetary policy encouraged the housing and consumption booms in the US. If the burgeoning US CAD were to be explained by an enhanced desire for US consumers to consume today (a changed discount rate for example), the appropriate and complementary policy response would have been to adopt contractionary fiscal policy. [14] Where increases in aggregate demand are explained by large (and potentially unsustainable) *fiscal* deficits, the "solution" would be to reduce public spending or raise taxes. The US has had a rising public sector deficit since 2001; from 2001 to 2008 total US public debt climbed from 54% to 75% of GDP. Public finances have been a key contributor to large current account deficits which were 5.2% and 4.9% of US GDP in 2007 and 2008. Other fiscal policies included US homeowners' tax exemptions on their mortgage interest payments giving them an incentive to purchase houses with large loans, and implicit guarantees on the housing corporations such as Fannie Mae and Freddie Mac who are charged with expanding domestic home ownership. Government policy encourages home buying among lower income purchasers.[15] By contrast, in 2007 and 2008 the CASes as a ratio to GDP were 11% and 9.8% for China, 4.8% and 3.2% for Japan, and 7.5% and 6.4% for Germany. Fiscal policy was also conservative in Germany and China. Middle Eastern oil exporters also could substantially increase domestic expenditure through expansionary fiscal policy- Saudi Arabia's fiscal surplus has increased continuously from 2004 (it had been falling during 2001-2004).

Governments' choice of overall monetary policy has had substantial implications for aggregate demand and current account deficits as well. In the US, monetary policy was supportive of the boom (Taylor, 2009) in the sense that more restrictive monetary policy and higher interest rates could have slowed credit growth. Instead monetary policy supported the

[14] Policies aimed at managing aggregate demand become more complicated when partner countries also undertake actions that undermine needed relative price adjustments (such as depreciating their currencies to maintain their competitiveness).

[15] The housing boom facilitated spending by those who have a high propensity to consume out of income/wealth by giving ownership to poorer, more liquidity constrained consumers who borrowed on home equity

credit and asset price booms. Adjustment in a country's external position through the returns on net foreign assets is affected by policy, for example exchange rates.[16] Finally, financial regulation of mortgage loans, and associated derivatives and supervision by commercial banks was insufficiently strong to contain risks. Expansionary monetary policies, fast growth of credit, a large fiscal deficit and fiscal incentives to borrow (e.g. for mortgages) all came together to raise aggregate demand and create vulnerabilities in financial markets.[17] Actions of the US authorities raise questions about how policies skewed private sector preferences and whether alternative policy choices might not have prevented the 2008 debacle. What was happening in the US was mirrored in some Western European countries to different degrees. Among countries that had credit booms many also had asset price booms. For example, in Spain banks had invested heavily in real estate (despite various constraints the Spanish authorities had established for credit growth).

Emerging and low income countries show some variation. In Eastern and Central Europe a number of countries (such as Latvia, Romania, and Hungary) financed domestic demand booms (and in some cases, property booms) with external borrowing. Foreign bank subsidiaries borrowed from parents and lent significant amounts of capital to emerging market borrowers. Foreign ownership levels of Central, Eastern and Southeastern European banking sectors is amongst the highest in the world.[18] Most of the countries' financial sectors are very exposed to Western European banks, particularly those from Austria, Germany and Italy, either directly through the corporate private sector or through domestic banking sectors. For the Baltics,

[16] Despite expansionary macroeconomic policies and high debt, historically, the US as a net debtor, paying low interest rates on its debt and earning higher interest rates on its foreign assets has had these offsetting earnings to a burgeoning CAD.

[17] Taylor , 2009, has a good discussion supporting the thesis that monetary policy in the US was overly expansionary, in the sense that it did not follow a Taylor rule for inflation targeting. .

[18] For example, asset share of foreign owned banks (in percent of total assets) is in the range of 75-98% in ascending order in Estonia, Slovakia, Bosnia and Herzegovina, Montenegro, Lithuania, Albania, Romania, Czech Republic, Hungary, Bulgaria, Serbia, and Poland.

Swedish banks have been the most active creditors. Countries in emerging Europe saw some of the highest rates of domestic credit growth during the 2000s, particularly since 2005. In most cases, rising current account deficits reflected private spending increases, a buildup of external private debt, and an increase in foreign currency denominated obligations in the banking sector.

The Latin American (LA) region saw an improvement in fundamentals during the 2000s. Fiscal deficits, a major cause of macroeconomic imbalances in the past- had been falling. This helped current account balances as did rising commodity prices, many countries being commodity exporters. Latin American growth performance and banking sector performance improved. During this period, dollarization of liabilities also declined in the Latin American countries relative to the 1990s. Domestic credit growth in the LA region was more restrained.

By dint of their strong export performance, high savings rates and strong fiscal positions East Asian countries have managed to maintain strong current account surpluses. For the East Asian countries, the response to the 1998 crisis was a build-up in reserves through a current account surplus (Edwards, 2007). Since the crisis of the latter half of the 1990s, the East Asian countries that had revealed their vulnerabilities have significantly improved the resilience of their financial sectors. In fact, credit growth to the private sector in East Asian countries was slower during the 2000s than it was during the latter half of the 1990s and credit to GDP declined in the 2000s.

The Middle East and North Africa region's oil exporters benefitted from rising trade and commodity prices and worldwide growth. In South Asia and Africa, product and financial markets are not as globally integrated as in some of the other regions: capital mobility is restricted and trade restrictions are still high relative to most other regions. But trade for these regions also grew with world growth. South Asia and Africa also gained with rising workers' remittances; current account deficits were manageable for the most part**.** Macroeconomic

fundamentals saw improvements in South Asia and Africa, except South Africa. Most of these countries did not experience credit or asset price booms, or large current account deficits as in Europe and the US. Most South Asian countries did not borrow abroad directly in private capital markets, with the exception of India, which also received substantial amounts of FDI).

Among developing countries with a capital account surplus, several analyses point to China's pegged exchange rate to the dollar as a cause of the worsening global imbalances[19] and there have been calls for appreciation of China's currency to reduce global imbalances. An appreciation of the yuan would have made Chinese exports relatively less desirable on world markets and world imports cheaper in Chinese markets. But given the status quo, i.e., China's extensive holdings of dollar reserves, it would also have had negative consequences on Chinese wealth denominated in dollars; an effect whose long term tendency could have been to push China away from the dollar and, some argue, to reduce private spending. Chinese firms (especially) and consumers (as well as German and Japanese consumers) have a higher propensity to save over their US counterparts. Germany, Japan and the Chinese spend much less of their income on consumption and have higher savings to finance investment (consumption is 70% of US GDP, 57% of GDP in Japan, 29% in Germany and 36% in China). In addition, the Chinese economic and financial system does not encourage consumption and borrowing to the extent that the US's does. An immature financial system means that credit intermediation is less developed than otherwise would have been the case and credit for consumption purposes harder to obtain. Further, in the absence of state-sponsored safety nets or well-developed financial intermediaries, Chinese consumers apparently hold high levels of precautionary savings. The government of China's policies towards corporate taxation and personal consumption encourages investment over consumption. (IMF WEO April 2008). Other East Asian countries have also

[19] See for instance Obstfeld and Rogoff (1995a,b)

enjoyed surpluses as their export positions have been favorable and because investors have found East Asian countries attractive (particularly for FDI).

In sum, global imbalances are the result of global private and public sector decisions. History suggests that persistent and high deficits are rare. Countries end up adjusting; and a smooth adjustment is obviously more desirable than a sudden one. To the extent that citizens' preferences (portfolio or other), economic endowments and opportunities differ, some countries will spend more than they save and vice versa. If external balances are on a sustainable path, these imbalances alone should not be a cause for worry. But, *government policies* in their attempts to foster growth or redistribution can shift these patterns and make them unsustainable. More contractionary monetary and fiscal policies in the US, more expansionary fiscal policy in China and a more flexible exchange rate regime might have prevented the build-up of "structural imbalances". In an alternative scenario, tighter macroeconomic and financial policies in the US would have meant less of a credit boom, lower asset prices and lower aggregate demand. The same holds true for other current account deficit countries that integrated swiftly in global markets. But it was harder for the smaller open economies to manage their economies in the face of a global credit onslaught. More constrained aggregate demand would have led to smaller CADs. In China, an alternative scenario would have meant a more appreciated exchange rate, looser fiscal policy, a more market oriented economy, a developed financial sector and a lower CAS. Middle East oil exporters would have boosted domestic demand more by increasing spending. Similarly, there would have been higher spending in Germany and Japan. Germany has had a CAS for a while, and its government has been relatively frugal as has been its aging (and eventually declining) population. Japan's alternative macroeconomic scenario is more complicated. Along with expansionary fiscal measures, Japanese citizens have increased savings

during 2000-06. In 2006, national savings were 27% of GDP, rose to 29% in 2007 and declined to 23% in 2009 during the crisis while public debt stands at almost 200% of Japan's GDP.[20]

Finally, it must be noted that the facility with which the US has borrowed on world capital markets has had a lot to do with the dollar's status as a reserve currency. Portfolio choices made around the world have a significant effect on how large a CAD country can finance. Creditor countries hold significant amounts of dollar assets. In the wake of the crisis, countries have wanted to diversify their reserve currency holdings. Faith in the dollar as a store of value and in the US financial system as a safe (and liquid) haven has declined. However, the rise of other currencies (e.g. the Euro, whose prominence had already been rising) will depend on the depth and liquidity of financial markets in these currencies and in the ability of countries to change currency composition without causing large changes in their wealth. As other financial markets develop, other currencies will become more attractive for risk diversification purposes. The dollar will continue as the prime reserve currency for the near future for lack of alternatives and probably because large changes in asset composition will reduce the price of the dollar and the wealth of those holding dollars.[21]

I.2. Finance

Global imbalances have existed for a while. So the trigger for the collapse in financial markets was not a "sudden realization" that imbalances in various countries were unsustainable; nor was there a sudden and unusual jump in the US CAD in either 2007 or 2008 (Figure 1). The trigger was in finance, or rather the failure of finance in US mortgage markets. Various types of innovations occur in financial markets, many aimed at changing the risk-reward profile that each institution has, at increasing market share, or at reducing the costs associated with regulatory

[20] http://www.jil.go.jp/kokunai/statistics/databook/2009/01/p033_t1-8.pdf
[21] See Cohen, Finance and Development, September 2009, Vol 45, #3.

compliance. The most talked about innovation for a while has been the mortgage "originate and distribute" model used in the US financial sector whereby those who gave mortgage loans did not keep them on their books but distributed away the risks associated with them through securitization. The securitization frenzy in mortgage markets reduced incentives for lenders to carefully screen or monitor borrowers as they did not expect to keep these loans on their balance sheets. In addition, the repackaging was complex so the risks of the securities and the quality of the underlying assets hard, and perhaps even impossible, to ascertain. This financial innovation led to risks originating in one sector being spread across the economy and through rising leverage, being magnified.

The regulatory and supervisory system had fatal flaws. Under existing regulation, securitization meant firms could move mortgage-backed assets off-balance sheet and reduce capital charges. The regulatory and supervisory system depended excessively on the private sector and on markets to monitor and restrain financial intermediaries from excessive risk-taking and assumed that market prices embodied all relevant information (as witnessed through their reliance on rating agency assessments, internal bank models used to estimated risk, and mark to market valuation to evaluate risk). Finally, regulation and supervision only considered micro-prudential aspects. It assumed that if individual banks were safe, then the whole financial system was managing risk effectively and was safe. They ignored the fact that summing individual banks' risk was not sufficient to gauge aggregate risk; endogenous risk was not incorporated into regulatory requirements. In good times, regulators ignored the systemic importance of individual institutions (e.g. size, leverage, interconnectedness). A complicating factor was that the links between unregulated and regulated entities were pervasive and it was difficult for supervisors and regulators to understand the extent of affecting the regulated system or the implications of this interconnectedness. Many of these weaknesses in the regulatory and supervisory framework

were shared across countries. Investors and supervisors together misjudged the possibility of bad outcomes (the fat tail distribution problem) and the magnitude of possible losses. Meanwhile, the vast US financial system became more and more leveraged and interconnected.

II. The Crisis

II1. The Beginning of the End: 2007

The first signs of trouble emerged in July 2007 but conditions worsened near the end of the year and markets crashed in 2008. It is hard to know exactly what triggered the crash of the financial system. Default rates on mortgages had started increasing in the US subprime market (Frank and Heisse, May 09, DellAriccia et al., 2008) and accumulated losses (defaults) on mortgages reached levels that apparently began to create problems for certain lenders. It is uncertain why these losses appeared at that particular time since property values continued to rise. One possibility is that the stock of creditworthy borrowers was rising at a slower rate than the rate of credit. As losses grew, participants in financial markets realized that their magnitude could be large, but, key to the ensuing panic, they did not know in *which* financial intermediaries the risks were the largest. The problem of rising mortgage defaults was transmitted through the financial system to various financial intermediaries including insurance companies, investment funds, (and stock markets), which led to an insidious magnification of creditor-debtor problems and inability to gauge counterparty risk accurately. The flood of credit had destroyed good judgment. And then there were “animal spirits” that attacked financial markets.

As weaknesses emerged in successive financial institutions, the value of securitized assets fell. There was a consequent scramble for liquidity and “deleveraging” as financial institutions rushed to raise capital. The stock market crashed in the panic. The same wealth (and

liquidity) effects that had encouraged consumption the year when credit was easily available to borrowers now discouraged spending in the US. Some analysts pinpoint the critical moment to the Lehman Brothers case and the US refusal to prop up this institution. Others contend that even if Lehman had been "rescued" by the US authorities, the crisis of confidence may still have occurred by the very fact that Lehman needed rescuing. The knowledge that large institutions that were traditionally thought to be "safe" were struggling for liquidity would have had this effect. [22]

Developing countries suffered directly through the deleveraging actions of financial intermediaries that were intent on raising capital and as a result of the flight to financial products that were viewed to be less risky than developing country assets. There was a withdrawal of funds from emerging market stock markets, a rise in emerging market bond spreads, depreciation of their currencies (or a run-down in reserves) and generally tighter access to credit. Between 2006 and 2008, Bulgaria's EMBI showing that the spread on Bulgarian bonds increased from 66 basis points to 674, Poland's from 47 to 314, Argentina's from 216 to 1704, Chile's from 84 to 343 and South Africa's from 84 to 562. The overall global EMBI spread rose from 171 to 724bp. Among developing countries, those in emerging Europe which had some of the highest CADs going into the crisis were badly affected by the tight credit conditions. Even though foreign banks own large portions of many of these countries' financial systems, the banks felt parent banks' financial constraints. As the region's credit boom ended, so did the housing/asset price booms. Where fixed exchange rates had particularly encouraged excessive foreign borrowing, the situation was relatively worse. Countries in emerging Europe and Central Asia also suffered

[22] Perhaps in the latter scenario, the collapse would have been less severe since the government's backing would have been certain. The US government backed AIG and the crisis continued. The government judged that it would be worse for the "confidence factor" to let AIG sink in the aftermath of Lehman. The counterfactual is hard to evaluate when markets are characterized by unpredictable (and by definition, very volatile) "animal spirits".

dramatic declines in trade and falling revenues as commodity prices, and remittances fell. In South Asia, India's stock prices plummeted as capital flew out, reserves fell and domestic liquidity tightened. India's currency depreciated and short term interest rates rose. The collapse of trade and domestic demand meant housing construction, information technology, and consumer durables took a hit. (However, India still had and has positive growth). In Latin American countries, FDI had fallen by 45% by mid-2009 relative to the previous year (ECLAC) exports and imports by 30%, and the terms of trade by 30%. In East Asia the capital inflows of early 2008 had turned to outflows by late 2008.

Many low income developing countries did not feel the overall impact of the financial crisis through their financial sectors as their financial systems are not well integrated into global markets. Even countries such as Madagascar, Mozambique, Uganda, Zambia, Botswana, Ghana and Cameroon in Africa with 60% of banking assets held by foreign banks did not feel the shock as these banks have solid domestic deposit bases from which they fund local activities and banks did not withdraw funds away from these markets. But the financial crisis had real effects on poor developing countries (a) reducing demand for developing country exports, (b) by causing a sharp drop in commodity prices, (c) by drawing formal trade finance instruments away from them in favor of developed country firms or by reducing the access of smaller firms;[23] and (d) through falling remittances. Remittances which had reached US$338 billion in 2008 fell by 6% in 2009 (See figure 2e). Countries in Latin American, emerging Europe and Central Asia saw the largest declines in 2009. Countries with sharply lower remittances are seeing aggregate demand decline steeply (for example Armenia and Moldova). Remittances to South Asia and Africa were broadly

[23] A great deal of trade previously occurred through open accounts at banks (without the need for formal certification/guarantees etc from banks) but the demand for formal bank involvement in securing payment has increased. The higher demand for this type of trade finance for all parties, in a situation where credit is already constrained, tends to displace developing country firms and smaller firms in developing countries.

stable. South Asia saw a huge jump in remittances of 35% in 2008 and the level was maintained in 2009.[24]

The economic crisis had a magnified effect on world trade. Trade fell faster than income around the world- a result of the confluence of the decline in commodity prices, the decline in financing and the globalised production structure for many goods. In 2009 world GDP fell by -0.8% but trade fell by 12.3%. Production for many manufactures is spread out among different countries and each time a product crosses borders its value is recorded in gross value terms while GDP only measures the value added of production. So when GDP declines, the measured decline in trade may be much larger.[25] East Asia was hit particularly hard by the decline in trade. The example of trade in semiconductors produced in the East Asian region illustrates how integrated production structures have affected trade volumes. Product semiconductors need to be customized for various end uses which today range from automobiles and heavy machinery to consumer electronics and personal computers. This allows firms/clusters located in different countries to specialize in particular varieties of semiconductor design and manufacture. Most newly industrialized East Asian economies such as Korea, Taiwan, and Singapore are simultaneously significant exporters and importers of semi-conductors. For example, Korea exports almost 90% of the chips it manufactures, but imports almost a comparable volume of chips[26]. Countries in Latin America by contrast, suffered less from this type of effect as production structures tend to be less integrated across countries.

[24] Migration and Development Brief 11. Migration and Development Team, DECPG, WB. Nove 3, 2009. S. Ratha, Mohapatra, and Anil Silwal.

[25] This latter effects means that a final good that is traded between countries A and B for example, may have been partly assembled in C and partly in D before final assembly in B for shipping to A. B's GDP will record only the value added by B but the trade value to A will include the value added in C and D. so while B's GDP falls by the smaller amount, the decline in trade reflects the whole value of the product . Note that when D stops manufacturing the intermediate input to ship to C, it will record a decline in value added in GDP and a commensurate decline in trade values. C will record a drop in the whole value of its contribution as well as the contribution of D.

[26] Wendy Dobson (1997), Crossing Borders: Multinationals in East Asia in Dobson and Yue (ed) Multinationals and East Asian Integration, International Development Research Centre(IDRC), Ottawa and Institute of South-East Asian Studies (ISEAS), Singapore, pg 223-225

The initial disturbance in US financial markets led to the propagation of several shocks to developing countries:

- A capital account shock leading to a drying up of international (and domestic) credit
- A trade shock and a terms of trade shock for many as demand for their exports fell along with commodity prices[27]
- A shock to earnings due to a drop in workers' remittances

- A confidence shock to consumer/ investor and/or government faith in the ability of markets to deliver welfare improving outcomes. Some have referred to this disenchantment as a switch in ideology though this characterization seems an overstatement. Economists have been debating the pros and cons of more (or less) government regulation ever since Adam Smith's coining of the phrase "invisible hand". Often historical precedent or sharp changes in political or economic power have shaped preferences regarding the appropriate role for government. For example, Continental Europe has traditionally voted for more government intervention than has the US. The dramatic changes in income that occurred in 2008-09 and the inequalities revealed by the shock are bound to raise questions about the value of existing market structures and the extent of government involvement needed in the economy to support citizen welfare. It has revived the conflict between those who favor "rationality" versus those who favor animal spirits as the primary determinants of individual behavior in financial markets. And as the crisis was an international one propagated through finance and trade markets, there is questioning about the value of global integration. But these questions have been debated after every financial crash.

[27] Commodity and food importers gained from lower prices but lost in terms of lower overall export demand.

II.2. Policy Responses to the Crisis

Policy responses to deal with the economic crisis have been wide-ranging. All countries affected have adopted fiscal, monetary, and/or financial sector policies to arrest the decline in output, to stabilize their economies and to protect the vulnerable.

As the financial system began collapsing, the US and EU governments took action. The Federal Reserve has provided unprecedented amounts of liquidity to markets in an attempt to counteract the liquidity crunch that was associated with deleveraging and heightened risk prospects. From September 10, 2008 to January 2009, the Fed's deposits from non-traditional programs jumped from 32 billion to 828 billion dollars**.** During this time, currency increased only moderately but the monetary base doubled (Anderson, 2009, p13).[28] The US Federal Funds rate was successively reduced from 1.81 to 0.15% during this period. The Fed's actions to raise liquidity were accompanied by various other measures: it purchased collateral of uncertain quality from financial institutions to reestablish the market for certain asset categories, bought treasuries from the public, provided longer term credit and provided swap facilities to foreign central banks. The EU cut policy rates and banks have been granted essentially unlimited access to central bank liquidity at the ECB's key policy rate. In a coordinated effort, governments provided fiscal support to the banking system, through recapitalization, guarantees for interbank credits and asset support schemes. 2-3% of GDP was committed by Euro area governments to stabilize the financial system. Non-standard measures include: increasing the number of counterparties taking part in refinancing operations (the number increasing from 1700 to 2200), broadening the list of assets that could be used as collateral, and central bank readiness to provide unlimited liquidity.[29]

[28] http://research.stlouisfed.org/publications/regional/09/07/monetary_policy.pdf

[29] Wall Street Journal, Stark: IMF Boost is Helicopter Money" , April 7, 2009.

Outside the US and Europe too, there has been an unprecedented use of expansionary monetary policy to counter the incentives for credit withdrawal by the financial sector. Several emerging markets (such as Brazil, Romania and India) have used interest rate cuts to raise market liquidity. However, in many developing countries too, interest rate cuts were not sufficient to make up for the perceived increase in counterparty risk so credit markets remained illiquid. Additional measures aimed at dealing directly with the increase in perceived counterparty risk were several- central banks took more risky collateral, acted essentially as market maker, increased the number of counterparties they interacted with, provided longer term credit for an expanded set of collateral, reduced reserve requirements, guaranteed the availability of foreign exchange and so on. In E. Asia, central banks have reduced policy rates in all middle income countries, Vietnam and the newly industrializing economies (except Singapore). Among other measures, China and Indonesia for example, cut minimum reserve requirements for dollar deposits, and Indonesia and Vietnam increased rates paid on required reserves and many extended the coverage and maturity of central bank operations.[30] In South Asia, India reduced the repo rate, reduced the reserve ratio, and established an exclusive repo facility to support non-bank financial intermediaries among other things. In terms of financial market actions, regulators practiced forbearance, or suspended mark to market accounting, guaranteed bank deposits, or guaranteed loans to companies, or recapitalized financial intermediaries through bond or equity purchases, and in some cases closed them.

Some countries allowed exchange rates to depreciate substantially while others have staunchly defended their pegs. For those that defended their pegs, a loss in financial wealth and credibility resulting from a devaluation were perceived to be worse outcomes for the longer term than the adjustments required under a fixed exchange rate regime. Many East Asian countries in

[30] These measures contrast with those adopted in the wake of the 97-98 East Asian crisis when central banks kept interest rates high to defend their currencies and monetary policy was contractionary.

1998 made a different choice; they abandoned their pegs (Hernandez and Montiel, 2003) or managed exchange rate regimes and adopted floating rates. Most East Asian countries entered the crisis of the late 1990s with much smaller current account deficits and debt than their ECA counterparts. Indonesia for example, decided to have greater exchange rate flexibility. Malaysia opted to impose capital controls and maintain its exchange rate peg after an initial devaluation. In Latin America, Chile opted to float its currency around the time of the Asian crisis when contagion effects were felt around the world. During this crisis, several large governments moved towards managed floats and drew down international reserves where possible (e.g. Brazil, Mexico, India and South Korea).

In the current crisis, among the largest seven Latin American countries, currencies were devalued around 30% while interest rates were reduced. By late 2008, E Asian currencies had depreciated in nominal trade weighted terms except for those of China and the Philippines. Though Korea and Indonesia saw large amounts of foreign capital being withdrawn and currency depreciation, they were able to weather the financial crunch as they had learned the importance of holding large reserves during the 1997-98 crisis. In South Asia, the Indian rupiah depreciated substantially. In emerging Europe, Latvia, Macedonia and Belarus have maintained pegged exchange rates (at the time of writing), while others such as Hungary, Poland, and the Czech Republic have maintained floating rates; and their exchange rates depreciated. In choosing an exchange rate policy response many countries have weighed the balance sheet effects of a devaluation on wealth (as residents had borrowed in foreign currency) and the credibility of the monetary authorities against the potential of a faster boost to the tradable sector and reallocation of resources. Both growth and distributional consequences would have been considered.

Most developed countries have engaged in fiscal stimuli that have included a variety of measures in addition to the previously mentioned initiatives to support the financial sector. The

US approved a stimulus package worth US$150 billion (less than 1% of GDP) in 2008 but almost 5% of GDP during 2008-2010 in cumulative terms (not including bank restructuring costs).[31] The stimulus package covered transfers to households and temporary tax reductions. The US guaranteed the rollover of loans to the car industry- an action that sparked significant controversy about the proper role of government. The UK had temporary VAT cuts, brought forward planned investment projects, had a small enterprise loan guarantee scheme, and subsidies for the automobile industry, among other things. Initially, the EU relied on automatic stabilizers but eventually adopted an EU-wide program and member countries had national plans as well. EU countries discretionary fiscal measures of around 1.5% of GDP. In addition, member countries such as German, and France have taken measures to support the troubled automobile industry. Japan's economic stimulus reached up to 5% of GDP and its fiscal plan included an employment program, an expanded investment program and subsidies to help the car industry.

Many developing countries also took a number of fiscal actions in 2008. In the LA region for example, Mexico, Argentina, Brazil, Chile and others undertook fiscal expansions (in contrast to the 1998 financial crisis when fiscal policies were contractionary). Mexico's stimulus plan amounted to 1.5% of GDP and Brazil's to about 0.5% of GDP.[32] In East Asia, China's stimulus package has been the largest relative to GDP. China has adopted measures to help certain sectors, such as the automobile sector and steel; others have undertaken to help export sectors through preferential or subsidized loans, or through the provision of guarantees on loans among other things. LICs in East Asia have had little or no capacity to finance fiscal stimuli and have looked to foreign aid to fill the gap between enhanced expenditure needs and falling revenues. Countries in Europe and Central Asia embarked on enhanced unemployment

[31] http://www.imf.org/external/np/pp/eng/2009/020109.pdf, Horton and Ivanova.
[32] The Global Financial and Economic Storm: How Bad is the Weather in LAC? Spring Meetings, 2009. Chief Economist's Office.

insurance, provided subsidies to retain employment in firms, launched public works schemes, reduced tax rates, and increased social assistance payments and transfer payments to the poor. Among South Asian countries, the Indian government's fiscal stimulus resulted in the deficit rising from 2.7% of GDP in 2007-08 to 6.2% of GDP in 2008-09. Measures included tax relief, and increased expenditure on public projects to create employment and public assets.[33] Bangladesh had a stimulus package that consisted of cash subsidies, augmented social security schemes and loan facilities.[34]

However, many emerging markets faced problems that were distinct from those in most of the developed world. These are well illustrated by the experience of several countries in emerging Europe. Estonia, Macedonia, and Latvia did not adopt fiscal stimulus plans in response to the global crisis. The large financial and trade shocks had a strong negative impact on their fiscal deficits raising concerns about debt sustainability. In order to maintain confidence in the economy, the government and the currency, these governments further reduced their fiscal deficits and undertook discretionary measures that were contractionary or procyclical (countering the effect of large automatic stabilizers).In a sense, these measures may be considered to be "contractionary stimuli" in the sense that the alternative of discretionary expansions would have had a negative effect on private activity and perceptions. In their case, increased public debt, and a fear of run-away public finances would have destabilized the economies further. However, these countries used prudential measures and central bank support to stabilize their financial sectors, and donor financing to fill external gaps and restore confidence in the economy and financial system.

[33] Sharma, VK: The International financial crisis and India-the impact, response and outlook. BIS Review 97/2009.
[34] http://www.sdpi.org/12thsdc/panel18.htm#4. Response of Bangladesh to global financial crisis. Selim Raihan. Twelfth Sustainable Development Conference.

III. Policy Choices and Some Lingering Questions

In the wake of the crisis, a number of policy questions regarding the management of booms, crises, and integration in world markets are being debated. The presumption is that governments' policy choices could mitigate the severity and collateral effects of market determined booms and busts and that booms should be "managed".

Do we want to kill booms and if so, how? Criticism of the pre-crisis boom years is based on the theoretical and empirical view that booms are often followed by busts (Reinhardt and Rogoff, 2009). While long run upward trends in output are desirable, growth above "trend" is supposedly unstable, will probably be "corrected" or end in a crash.[35] In bust years, policymakers examine the policies that exacerbated the downturn. The growth literature has shown that volatility is bad for long run growth (Ramey and Ramey, 1995). Others have noted that financial sector developments can have significant impacts on output volatility (Rogoff and Reinhardt, 2009) and that financial sectors that are large relative to GDP may be associated with higher volatility by magnifying shocks (Easterly, Islam and Stiglitz, 2000). An important question in this crisis is how countries are affected by growth crashes, rather than pure volatility. There is some evidence to suggest that large growth crashes have long term effects on productivity and long run growth.

Figure 3 below shows some possible scenarios for income growth before and after a growth collapse. In the figure income is growing at rate g0 until the crash at time t1, when the level of income drops from y0 to yC. As drawn, there is an immediate recovery (V shaped).[36] But the recovery could follow path g0' which has the same growth rate as g0 or a lower growth

[35] Leaving aside the difficult issue of identifying trend growth rates or changes in trend (e.g. due to liberalization).
[36] The graph does not show volatility around the trend growth rates only a large growth downturn.

path, g1. For g0', it will reach y0 again at time t2 and for g1, it will reach y0, much later at t3. Alternatively, if the economic boom is managed and output grows more slowly from t0, then it may be that the crash would not occur at all and the economy would be on path g2 (or the crash would be smaller) or g3. For path g2, income reaches y0 at t4. Income reaches y0, only at time t5 for path g4. Which path is preferable depends on the risks associated with each path and the values attached to foregone income at different t. The simple diagram does not capture all the complexities of the story. For example, different growth paths and crashes may have quite varied distributional effects. But it demonstrates that there are many alternative scenarios that output can take.

If booms should be contained, how should this be done? In the wake of the 2008 financial crisis, the focus has been on limiting credit growth which was very high in the 2000s, particularly the latter half of the 2000s. Many credit booms have ended in a financial sector crisis and a growth crash.[37] So the presumption is that booms must be dampened. Slower credit growth would probably have meant less investment (e.g. in real estate) and lower consumption and therefore a lower rate of income growth. In practice, the key questions are *when* governments should slow credit booms, *how much* to intervene and *what* policies to use. Experience indicates that a mix of different policies, monetary, fiscal and financial, should be used to prevent overheating.

The first sign of danger in world markets was the presence of large "structural imbalances". Consumption or investment booms in several countries supported by fiscal, monetary and exchange rate policies produced large current account imbalances that were sustained over several years. Economic history has shown that periods with large current account

[37] Fast credit growth has often reflected euphoria in markets, unrelated to fundamentals, or skewed market perceptions of risk. But, sometimes reflects financial deepening or normal cyclical upturns. In Ireland during the late 1990s, rapid credit growth supported financial deepening and good macroeconomic performance.

deficits can end in sudden and dramatic adjustments in relative prices and quantities across countries (Obstfeld and Rogoff, 1995) and these imbalances are rarely sustained over long periods. On the other hand, many countries may view policies supporting high current account *surpluses* as a way of reducing financial risk in global financial markets. When large countries hold large surpluses, their actions in global financial markets may however be destabilizing for *world* markets. So the first 'lesson', an old one, is that countries should try to maintain moderate external imbalances and certainly to be wary of increasing imbalances (particularly at a fast rate) over a period of years. If countries had maintained smaller current account surpluses and deficits, asset price bubbles may have been contained reducing the probability of a crisis or a dramatic adjustment in prices occurring. Reducing imbalances means conducting appropriate macroeconomic policy (by modifying aggregate demand and exchange rates) as discussed in the text and large countries have a disproportionate share of the responsibility for containing global market problems.

Fast credit growth has been defined as a credit *boom* when the growth rate's deviation from the trend growth rate is greater than 1.5 times its historical country-specific standard deviation *and* when the annual growth rate of the ratio of bank credit to the private sector to GDP exceeds 10 percent (Mendoza and Terrones, 2004, and Dell'Ariccia et al., 2005). Once a credit boom is identified by such criteria, monetary policies and prudential regulation (e.g. raising interest rates or reserve requirements, specific prudential regulatory limits on credit to the private sector, higher capital charges on certain categories of assets, requiring borrowers to have a certain threshold of income etc) can be adapted to moderate credit booms. Thailand during 2000-04 demonstrates that good policy can limit credit growth. Credit-card debt was doubled during this period and the Bank of Thailand put in place prudential curbs to limit the growth of such debt, established ceilings on outstanding debt balances and minimum income requirements for

card holders. These policies served to substantially slow the annualized growth rate of credit-card debt (Dell'Ariccia and Marquez, 2006). Where lending in different currencies is prevalent, fast credit growth may lead to an additional source of uncovered risks, those presented by volatile exchange rates, as evidenced by the experience of some countries in emerging Europe and Central Asia. These sorts of risks may be best managed through prudential regulation (e.g. additional charges for foreign exchange denominated loans, requiring that borrowers have a source of foreign exchange or more exchange rate flexibility).

When fast credit growth is accompanied by asset price booms, consumption and investment growth and leverage are seen to increase at the same time. Monetary policy may be adjusted to moderate asset price booms. The arguments against using monetary policy to respond to *asset* price booms (for example when credit growth overall may not be characterized as a "boom") are that asset price bubbles are hard to identify, monetary policy is a blunt instrument with which to target asset price bubbles as it will slow overall activity, and the effect of higher interest rates on asset prices are uncertain.[38] These statements are true to some extent. But arguments in favor of using monetary policy to manage asset price booms are persuasive. Prudential regulation and supervision are not always effective in slowing lending or leverage to the extent desired, particularly when regulations can be avoided or simply because regulators cannot foresee the consequences of every financial innovation. When there are accelerations in credit growth and continuous innovation, financial sector supervision and regulation has a difficult time keeping up with market changes and constraints on monetary policy may be needed. Moreover, when times are good, financial sector participants always tend to underestimate risk. Another reason for monetary policy intervention is that credit growth not only supports asset price booms but also consumption growth. A boom in one asset class "spills

[38] Investors expecting asset prices to rise very fast may not respond to relatively smaller increases in interest rates.

over" into other sectors (for example, housing price booms mean greater household wealth and as seen, higher aggregate demand and higher borrowing by homeowners) propagating the cycle of appreciation and increasing leverage. Asset booms may therefore "lead" to excessive credit demand and levels of leverage that become unsustainable when asset prices fall. Even if asset price increases are high relative to interest rate changes, a dampening impact on demand would be expected from tight monetary policy.

Prudential regulations have come under attack in the wake of the crisis for not having incorporated the macro impacts of financial sector regulation, that is, for being based on the notion that it was sufficient for financial regulation to concentrate on individual bank safety rather than the risks inherent in the whole financial system. Macro-prudential regulation attempts to account for the endogenous and macro responses of the system to individual shocks and thus to mitigate volatility in the financial system. Suggestions are to establish a set of rules that would be applied to limit credit growth when certain risk factors are magnified. The emphasis on rules comes from the notion that few regulators or supervisors are willing to tighten regulations on a discretionary basis in good times. A key change to prudential regulations would be to reduce the pro-cyclicality of the Basel II requirements. Currently, capital adequacy ratios (CAR) rise and write-offs increase when profits fall having a further tightening effect on credit markets. So adjusting regulations would mean multiplying the CAR by a factor relating to macro-prudential risk. When there is increasing systemic risk, i.e., at times of increasing leverage, large maturity mismatches, fast credit expansion and asset price increases, the multiplication factor on the base CAR would be greater than unity so as to smooth the boom cycle. Conversely, it would be less than unity in periods of deleveraging.[39] Additional macro-prudential measures might involve setting maximum loan to value ratios (for mortgages), or additional charges for increases in

[39] Brunnermeier et al. (2009).

foreign currency debt.[40] In boom years, by lending more, financial institutions tend to increase in size. Regulations that imposed extra charges (whether for some form of deposit insurance or in terms of additional capital charges) on companies that grew above a certain rate would put limits on growth. Regulators' reliance on market prices to assess profitability or risk may exacerbate market instability. Mark-to- market accounting and use of credit ratings in regulation may have this effect. Reforms to mark to market accounting would aim to reduce the magnitude of booms and busts in asset prices when financial intermediaries as a group attempt to obtain liquidity (in bad times) or to lend (in good times). The use of credit rating agencies in supervisory/regulatory assessments are being revisited as using these to regulate may enhance the depth of boom –bust cycles or simply create perverse incentives for not revealing important market information. Reforms of compensation structures for financial sector employees/ managers are an important tool to address the incentives for short term risk taking which may exacerbate boom –bust cycles. Improved coordination of home/host country supervision of foreign subsidiaries/branches is also desirable to efficiently manage credit booms and crisis periods in particular. But, in designing new regulations, it is essential to remember that (a) financial intermediaries will have larger incentives to evade rules the more onerous they are; (b) the implications of setting boundaries of regulation in terms of what types of firms should be regulated will need to be rethought along with the specific new regulations proposed. In terms of how much monetary policy and prudential regulations would need to be tightened under different scenarios for credit or asset price growth, there are no clear cut answers at present. The effect of a certain policy differs depending on country circumstances and policies would have to be adjusted depending on country specifics.

[40] Some countries attempted one or more of these measures.

Emerging market financial crises have often followed periods of heavy capital inflows. Another policy candidate to limit credit growth is the use of capital controls. Controls on foreign borrowing or taxes on foreign exchange transactions have been widely used in the past. In an effort to control inflows (and credit growth) countries have imposed temporary capital controls. Chile adopted reserve requirements on capital inflows and succeeded in changing the maturity structure of debt. Most recently, Brazil has adopted taxes on capital inflows to limit exchange rate appreciation. The wisdom of imposing such controls has been widely debated and there is an acceptance that sometimes, some form of control may be warranted to limit damaging effects on the economy (Chile, Malaysia). These arguments are not discussed here (see Islam 2000). As the recent experience of countries in Eastern Europe shows, domestic credit booms supported by large inflows of capital complicated macroeconomic management. Experience indicates that while no policy may afford complete protection (as market participants find ways to evade controls), countries have benefitted from active interventions designed to restrict cross border capital flows.

Exchange rate policies may also be used to mitigate booms. For example, it is probable that fixed exchange rates in many countries encouraged higher capital inflows either in expectation of an imminent appreciation of the exchange rate or in the belief that investors would not face exchange rate risk. The latter case may be viewed as a moral hazard problem: excessive lending or borrowing arising from the belief in the government's guarantee of the price of foreign exchange or of a government bailout in case of devaluation. Exchange rate policy not only affects overall credit growth but also debt composition.[41] If fixed exchange rates, and open capital accounts encourage large capital inflows and foreign borrowing, or borrowing in foreign exchange, then exchange rate flexibility may discourage large amounts of unhedged borrowing

[41] Debt composition affects perceptions of risk and therefore also may affect the extent of the crash.

in foreign exchange and in addition, help countries to adjust their economies through fast changes in relative prices as well as quantities.

Fiscal policy can play an important role in mitigating booms. First, some countries have large automatic stabilizers (e.g. unemployment compensation, social transfers) such that government expenditures fall/ rise during high/ low growth and tax revenues rise/ fall during high/ low growth. In terms of discretionary action, some countries followed procyclical fiscal policies, while others took anti-cyclical measures. The US government deficit rose substantially during the pre-crisis period. Moreover, there were explicit fiscal incentives to encourage homeownership which combined with expansive monetary policy to raise demand for housing loans. Other countries have spent the additional revenues garnered during years of high GDP growth (for example, by granting huge public sector wage increases). On the other hand, Chile is an example of a country that saved additional fiscal revenues during the copper price boom in the pre-crisis period in a special fund. Russia and Kazakhstan did the same as oil prices jumped up. If fiscal policy were flexible, a possible tool to use during booms[42] would be a rising sales taxes or a surtax on property sales / new construction and higher capital gains taxes on large asset holders which are automatically triggered when property and asset prices (or an index thereof) rise above a certain rate or level. Another alternative would be to raise consumption based taxes temporarily (the mirror image of reducing taxes during downturns) when there is serious overheating. Yet temporary increases in taxes are very difficult to justify in any environment and the political will to adopt them would be particularly weak when tax revenues are rising. In boom years governments have little incentive to manage expenditures, since budgets remain manageable even as expenditures are increased. There is little incentive to retire debt as the debt

[42] The concept of boom is used loosely to denote any situation where there is overheating or output is growing above potential for a sustained period.

to GDP ratio is also falling. All three policies: retiring debt, raising tax rates and constraining expenditures would help manage the boom.

Some issues for crisis management. Governments must aim to preserve income in the short run, rebuild private sector confidence, and protect the poor. Governments can best do this by focusing on market failures that are exacerbated in the crisis (while laying the foundation for longer term improvements) and by establishing policies to address distributional impacts. This will generally mean that governments will adopt policies many of which need to be reversed or modified in the longer run. For many countries a growth downturn meant the adoption of expansionary fiscal and/or monetary policies to support aggregate demand, actions to reinvigorate the financial sector, various policies to protect the poor or unemployed, or simply containing public deficits and debt. Monetary and financial policies had the primary objective of stabilizing the financial sector and supporting credit to the private sector and they have helped achieve at least the first goal. Fiscal policy has been effective in bringing about *financial* stability and in creating some consumer/producer confidence. Perhaps these have been the two most important aspects of fiscal policy's stabilizing impact. In terms of the size of the longer term multiplier effect on expenditures (and therefore output and unemployment), the evidence remains to be collected, particularly as fiscal outlays and impacts occur with a lag. Market volatility has evoked demands for more constraint of markets and, as unemployment and poverty has risen, a greater concern for distributional issues. As the crisis wanes, there will be two main concerns (a) how to reduce the large public debts generated during the crisis; (b) how to withdraw from "crisis" related policies; and (c) ascertaining how to put in place policies to prevent the re-emergence of large structural imbalances that could engender global instability. This section covers some issues that need further thought as we assess crisis management policies (some have already been indicated in the previous section):

1). Short term and long-term goals of macroeconomic policy. In managing busts, what, if any, are the trade-offs between short run policies aimed at pumping up aggregate demand, policies aimed at protecting the poor and those important for longer run growth? During financial crises, attempts to stabilize the financial sector have been presented as protecting rich bankers at the expense of taxpayers. Governments' first priority must be to prevent a financial sector meltdown as this best supports a resumption of growth. In crisis times governments may err on the side of more support than needed as information is scarcer than at other times. The share of the effort going towards limiting bank failures versus handing out cash transfers to the poor or unemployed, or investing in infrastructure is an issue that needs to be resolved on the basis of the magnitudes of the various problems and the fiscal tools available to government.

2) Handling the policy reversal. When is the right time to reverse policies adopted to mitigate a downturn and how should governments proceed? Is it important to establish ex ante rules on policy reversal? For example, stipulating that the government or central bank would withdraw from the market if the price of an asset rose above a threshold value, or if GDP growth were to be above a certain percent in any quarter, taxes reductions would be reversed, or if credit growth to the private sector were positive for three quarters, monetary policy would tighten.

3) How much intervention in specific markets is desirable? When should governments use fiscal and monetary policy tools to be a market maker (e.g. buying private sector assets/securities directly, deciding which corporations to save and guaranteeing their loans, supporting trade finance or mortgage finance). Should the government intervene in particular economic sectors (e.g. export sectors or the automobile sector?) in response to a financial crisis? Is there clarity on the market failure arguments that justify government intervention, for example, to prevent unnecessary liquidations arising from imperfect market information. Finally, in retrospect, were

these measures effective in the crisis and are they promoting or delaying longer term restructuring?

4).Automatic stabilizers versus discretion. Are countries with more automatic stabilizers and/or fiscal rules doing better in managing behavior in booms or busts?

5) Monetary, exchange and fiscal policies: sharing the burden. How can monetary and exchange rate policy best support fiscal policy in a crisis given initial conditions? What are the conditions under which the two should work in tandem? Determining the optimal degree of flexibility in exchange rate regimes in response to shocks is hard. Countries around the world have had to make choices regarding how much exchange rate variations to allow in managing the effects of the global downturn. Exchange rate choices can have dramatic effects on individuals and governments through changes in wealth (net foreign assets/liabilities) but also through trade. In countries where the private sector had borrowed heavily in foreign currency, it was feared that the dampening effect on output of reduced debtor wealth and creditworthiness would be more harmful with a devaluation than the decline in trade competitiveness without one. Also, a devaluation of the currency had the potential to damage government credibility. But if monetary/ exchange rate policies cannot be used, the burden on fiscal policy is increased.

6) What about international financial integration? It is generally accepted that financial markets need regulation (whether of foreign or domestic banks) to manage market failures- the extent of regulation in each country is determined based on experience and history (endowments and politics) and these change over time. And international financial flows, for similar reasons, also benefit from regulation. Capital controls (taxes or other barriers of various kinds on capital flows) are one way to regulate financial integration. Capital flows between countries can sometimes overwhelm policy makers as shown in the current crisis. In order to regain some control over domestic macroeconomic conditions controls may be used to complement other

measures. Foreign entry is another aspect of internationalization. Generally foreign entry, with and without restrictions on capital movements has been viewed as favorable in terms of improving financial sector development, particularly efficiency in operations. Both aspects of financial integration would benefit from a renewed look at the regulatory structure governing integration and crisis management.

7) How to limit moral hazard in financial markets? There is a general acceptance that the US and other markets could have benefited from more regulation in the pre-crisis period. But determining and implementing the optimal degree and type of regulation that helps internalize externalities and supports good risk management is difficult. Decades of experience have also shown that overregulation of the financial sector increases incentives for evasion and may be harmful if poorly designed. But another principal concern is ensuring that penalties are so designed in crisis management as well as post crisis that they reduce the incentives for excessive risk-taking and reduce moral hazard going forward. So far, countries are struggling with reforms as discussed earlier in this paper (pg 32). The main issues will be to limit externalities associated with individual banks'/ firms' actions and in limiting damage during a crisis. An increasing focus will be on limits to growth, additional regulations to reduce risk-taking in large and interconnected firms, adjusting prudential regulations for their macro impact, and quick resolution of damaged financial institutions.

8) New development directions. Is there a new development paradigm that eschews integration in favor of a more inward driven strategy? Countries suffering trade shocks are now questioning the wisdom of export- led growth. Yet the terms export-led or outward-oriented growth can mean different things to different policymakers. In some usage, export led growth refers to especial incentives that support all or some exporting industries at the expense of others. In other more traditional usage it has meant reducing the focus on import substitution (not taxing

exports). Alternatively, it has meant supporting exports to the extent that export markets face higher entry costs (leveling the playing field). These debates are not opened here, but if export led growth is simply taken to mean looking externally for markets to complement domestic demand rather than substitute for it,[43] it is hard to argue that most economies should not follow this strategy. The more important question is how to deal with volatility in international markets.

9) How much international policy coordination is desirable or feasible? Asking sovereign nations to collectively "coordinate" in setting overall macroeconomic targets is a bit far-fetched if "coordinate" is to be interpreted as setting policy targets together. Even OPEC countries which can see clear and quick gains from cooperation (and have a simple goal- production) have had their share of difficulties in establishing and implementing production targets or remaining within assigned production quotas. International discussions around critical issues may help if they are perceived to be in individual countries' (or an important group of countries') interest. But realistically, discussions of China's surplus, and the US deficit did not engender "coordination" pre-crisis. U.S. current account deficits (reaching over $600 billion in 2006) were perceived to be a global threat, particularly because the probability of 'a hard landing of the US economy' was highly likely. In early 2006, the IMF proposed a multilateral approach to addressing global imbalances (it brought together the largest five current account surplus or deficit countries -- Euro area, US, China, Saudi Arabia, and Japan – to discuss the design and implementation of a medium term strategy to sustain robust growth (of 5% per year during the 2000-05) while reducing imbalances. The result was 2008.

In the crisis phase, it is hard to argue that all countries coordinated their fiscal stimuli or monetary and exchange policies. In fact, some packages were criticized for being anti-trade (an obvious example being the US Buy American provision). Rather, they responded to domestic

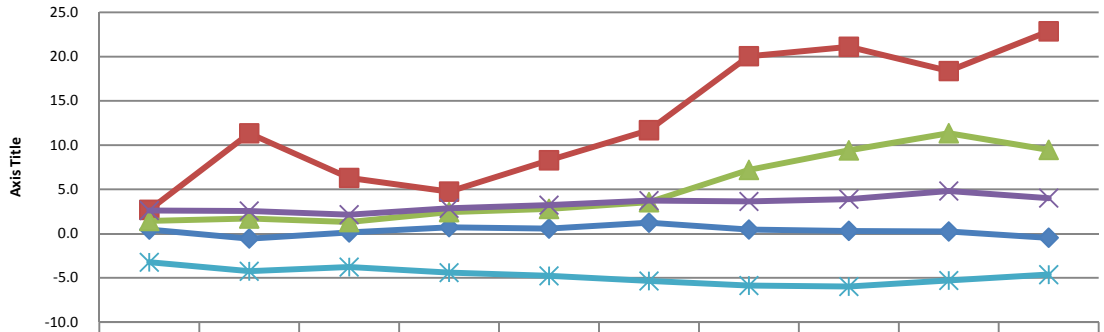
[43] Some countries depress domestic demand through certain policy choices.

needs and concerns with domestic long-term macroeconomic prospects. There was some coordination in managing capital flows (e.g. short term swap facilities and in dealing with foreign bank lending in developing countries) but these have been mostly of a temporary nature. Even now in the post-crisis period, there is tremendous variation in views among countries about how and when to draw back from expansionary policies and about the longer-term stance of macroeconomic policies.

Discussions on harmonization of financial sector regulations are ongoing and may yield some results but only as long as countries are convinced it is in their interest to harmonize regulations and to follow international standards. Agreement on standards does not ensure effective implementation.

The bottom line on coordination is that it is good to highlight the dangers of ignoring the impact of own policies on world markets (and in rebound, own markets) but expecting coordinated solutions worldwide is a grand expectation. First, the best stance for every country in terms of a (vague) notion of the "global" good is almost impossible to define. Second, what is good for the global outcome may not be the best for a single country so the incentive to commit may not be present. Third, implementation and time consistency are problems even if there is agreement. There could be broad agreement on certain principles, e.g. countries could agree to support more flexible exchange rates but implementing this would be another thing.

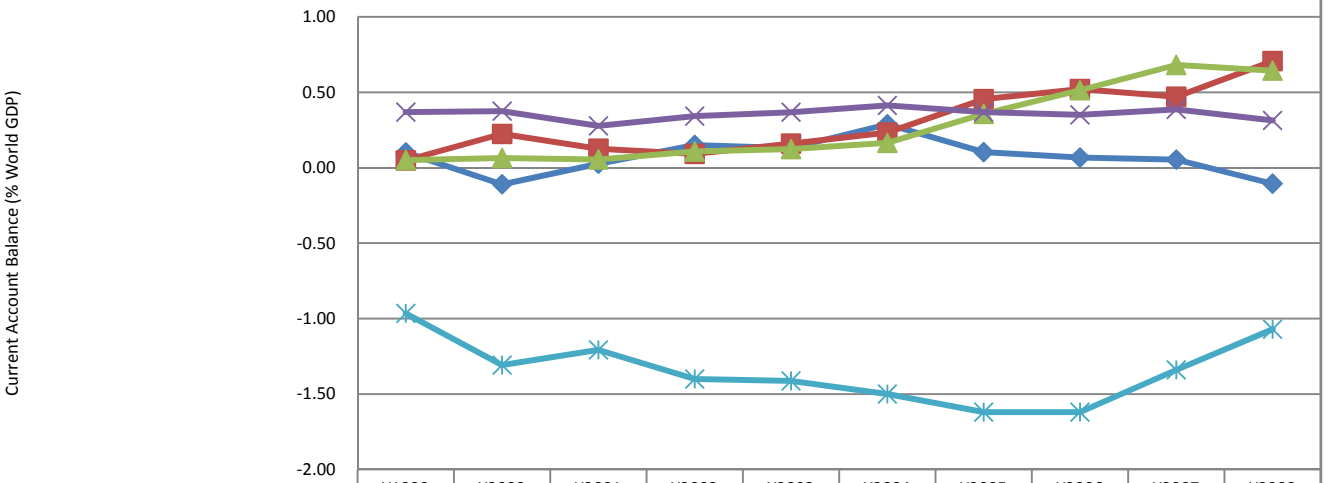
Figure 1a. Global Imbalances
(Current Account as % GDP)



	Y1999	Y2000	Y2001	Y2002	Y2003	Y2004	Y2005	Y2006	Y2007	Y2008
Euro_Area_CAD_%gdp	0.5	-0.6	0.1	0.7	0.6	1.2	0.5	0.3	0.2	-0.5
Middle_East_CAD_%gdp	2.7	11.3	6.3	4.7	8.3	11.7	20.0	21.1	18.4	22.9
China_CAD_%gdp	1.4	1.7	1.3	2.4	2.8	3.6	7.2	9.4	11.3	9.5
Japan_CAD_%gdp	2.6	2.6	2.1	2.9	3.2	3.7	3.6	3.9	4.8	4.0
US_CAD_%gdp	-3.2	-4.3	-3.8	-4.4	-4.8	-5.3	-5.9	-6.0	-5.3	-4.6

Source: Authors' calculations WDI-Global Develpoment Finance of the World Bank and the April 2009 WEO, IMF.

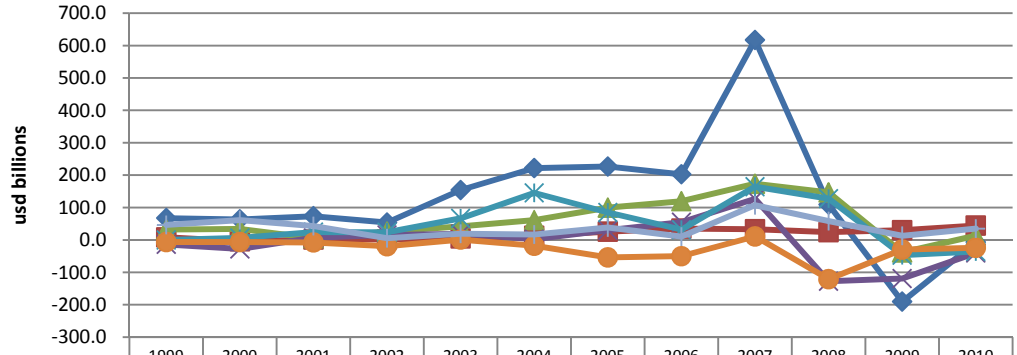
Figure 1b. Global Imbalances
(Current Accounts as % of World GDP)



	Y1999	Y2000	Y2001	Y2002	Y2003	Y2004	Y2005	Y2006	Y2007	Y2008
Euro area _CA in % worldGDP	0.10	-0.11	0.03	0.15	0.13	0.29	0.10	0.07	0.05	-0.11
Middle East _CA in % worldGDP	0.05	0.22	0.13	0.09	0.16	0.23	0.45	0.52	0.47	0.71
China _CA in % worldGDP	0.05	0.06	0.05	0.11	0.12	0.16	0.36	0.51	0.68	0.64
Japan _CA in % worldGDP	0.37	0.37	0.28	0.34	0.37	0.41	0.37	0.35	0.39	0.31
United States _CA in % worldGDP	-0.97	-1.31	-1.21	-1.40	-1.41	-1.50	-1.62	-1.62	-1.34	-1.07

Source: Authors' calculations WDI-Global Develpoment Finance of the World Bank and the April 2009 WEO, IMF.

Figure 2a. Private capital flows, net

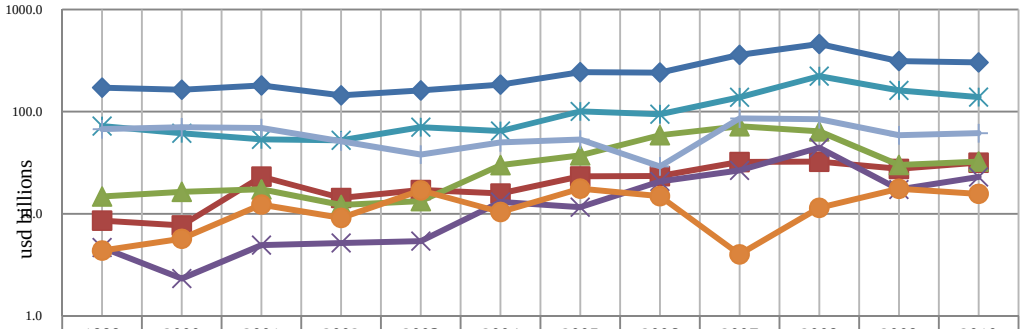


	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Emerging and developing eco	67.7	63.7	73.5	54.0	154.2	222.0	226.8	202.8	617.5	109.3	-190.3	-6.5
2. Africa	8.2	-3.9	1.3	2.0	4.9	13.0	26.0	35.2	33.4	24.2	30.2	44.7
3. Central and eastern Europe	32.3	34.2	5.6	25.9	42.3	61.3	99.9	120.0	173.6	147.1	-38.3	13.4
4. Commonwealth of Ind. States & Mongolia	-13.5	-27.7	6.9	15.7	19.0	2.6	30.4	55.1	127.2	-127.4	-119.0	-40.0
5. Developing Asia	0.3	6.3	24.3	23.9	66.9	145.6	85.3	31.8	164.8	127.9	-46.9	-35.6
6. Middle East	-6.2	-6.5	-7.6	-19.2	1.4	-17.7	-53.7	-50.0	11.0	-120.9	-29.5	-24.1
7. Western Hemisphere	46.5	61.3	43.2	5.7	19.7	17.1	39.0	10.8	107.4	58.5	13.3	35.2

Source: Authors' computations using WEO, July 2009 data

Notes: (1) The regional division is based on World Economic Outlook Database, july 2009 and IMF classifications;
(2) *Western Hemisphere* is composed of 32 countries, including *LAC* and other countries. These 32 countries are: Antigua and Barbuda, Argentina, Bahamas, The, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, and Venezuela. (3) Emerging and developing economies consist of 149 countries, including *BRIC*.

Figure 2b. Direct Investment, net
(logarithmic Scale)



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Emerging and developing eco	171.9	164.0	180.5	144.4	161.3	183.9	243.7	241.4	359.0	459.3	312.8	303.1
2. Africa	8.6	7.7	23.1	14.3	17.1	15.8	23.3	23.4	32.1	32.4	27.6	31.7
3. Central and eastern Europe	14.8	16.4	17.4	12.2	13.3	30.0	37.4	58.9	72.0	64.1	30.1	32.5
4. Commonwealth of Ind. States & Mongolia	4.7	2.3	4.9	5.2	5.4	13.1	11.6	20.7	26.6	44.4	17.3	22.9
5. Developing Asia	72.2	61.6	53.5	52.4	70.6	64.7	100.5	94.3	138.5	222.6	161.6	138.8
6. Middle East	4.4	5.7	12.3	9.1	17.0	10.4	17.6	14.9	4.0	11.4	17.6	15.7
7. Western Hemisphere	67.3	70.3	69.2	51.2	38.0	50.0	53.3	29.1	85.8	84.3	58.7	61.6

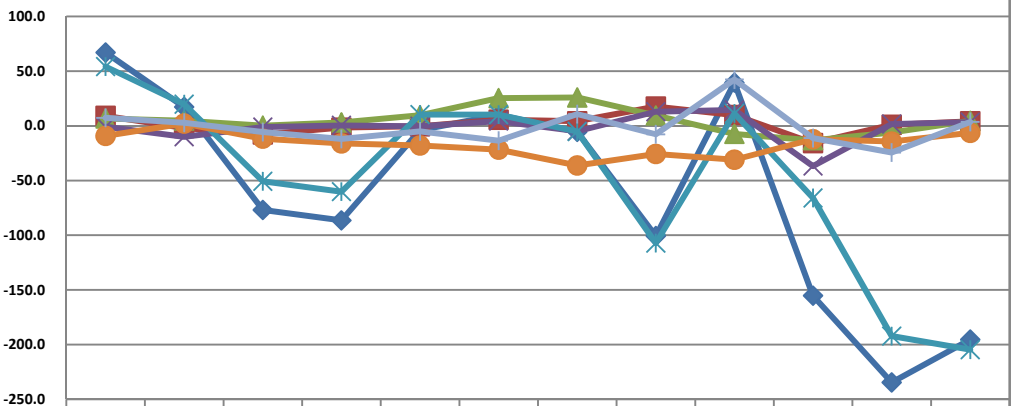
Source: Authors' computations and July 2009 WEO, IMF

Year (1999-2010)

Notes: (1) The regional division is based on World Economic Outlook Database, july 2009 and IMF classifications;
(2) *Western Hemisphere* is composed of 32 countries, including *LAC* and other countries. These countries are : Antigua and Barbuda, Argentina, Bahamas, The, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, and Venezuela. (3) Emerging and developing economies consist of 149 countries, including *BRIC*.

Figure 2c. Private Portfollio, net

(IBillions of USD)



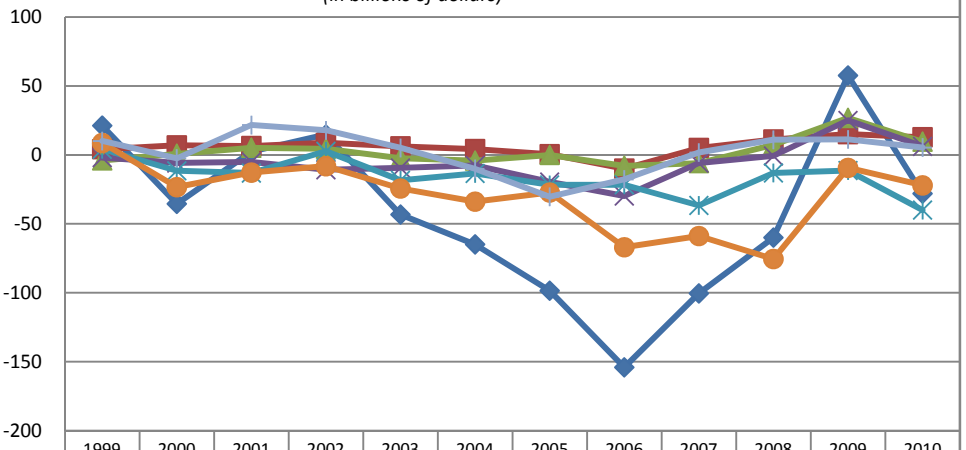
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Emerging and developing eco	67.0	17.2	-76.9	-86.4	-3.8	10.0	-5.6	-100.7	39.5	-155.2	-234.5	-195.3
2. Africa	9.1	-2.1	-7.9	-1.6	-0.4	5.6	4.2	17.6	9.9	-15.8	0.9	4.1
3. Central and eastern Europe	6.7	4.7	0.2	3.1	9.7	25.3	25.9	9.4	-7.4	-13.2	-6.1	4.6
4. Commonwealth of Ind. States & Mongolia	-0.9	-10.0	-1.2	0.4	-0.4	4.3	-4.9	12.9	14.5	-36.8	1.6	3.4
5. Developing Asia	54.1	19.7	-50.7	-60.2	10.3	10.2	-5.3	-107.2	11.2	-65.9	-192.1	-204.5
6. Middle East	-9.2	2.1	-11.8	-16.1	-18.0	-21.7	-36.2	-25.7	-31.0	-12.3	-14.4	-6.4
7. Western Hemisphere	7.3	2.8	-5.6	-12.0	-5.0	-13.6	10.7	-7.7	42.3	-11.2	-24.4	3.6

Source: Authors' computations using WEO, July 2009 data

Notes: (1) The regional classifications are based on World Economic Outlook Database, july 2009 and IMF classifications;
(2) *Western Hemisphere* is composed of 32 countries, including *LAC* and other countries;

figure 2d. Official Capital flows,net

(in billions of dollars)



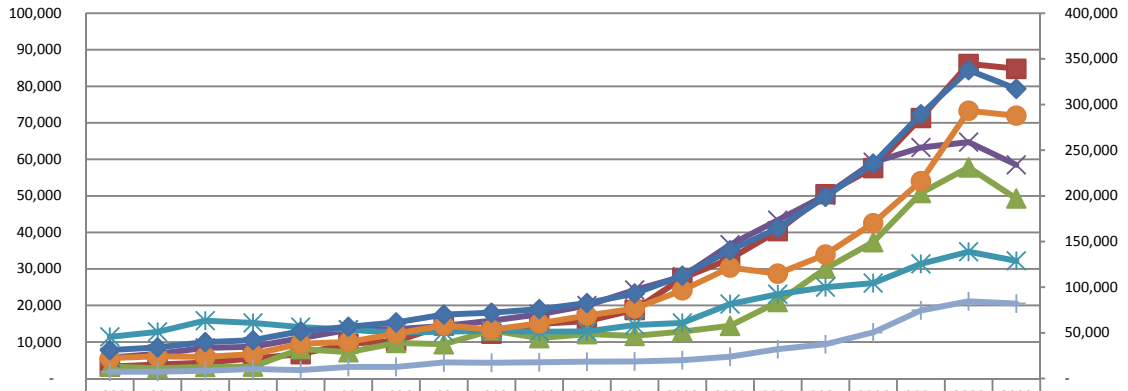
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Emerging and developing eco	21.163	-35.502	2.275	14.768	-43.321	-64.948	-98.522	-154.139	-100.536	-59.989	57.568	-28.094
2. Africa	4.115	6.938	6.457	8.794	6.203	4.215	0.516	-9.993	5.043	11.132	15.128	12.799
3. Central and eastern Europe	-3.988	0.802	5.186	4.47	-2.368	-4.127	-0.042	-7.93	-5.959	7.271	26.846	9.609
4. Commonwealth of Ind. States & Mongolia	-1.914	-5.83	-5.11	-10.764	-9.408	-7.59	-19.619	-29.768	-5.913	-0.725	25.059	6.232
5. Developing Asia	4.162	-11.481	-13.139	2.622	-18.408	-13.403	-21.717	-21.668	-36.592	-13.065	-11.314	-40
6. Middle East	8.69	-23.378	-12.809	-8.185	-24.392	-33.911	-27.28	-67.036	-58.884	-75.576	-9.416	-22.117
7. Western Hemisphere	10.099	-2.554	21.69	17.831	5.052	-10.132	-30.381	-17.743	1.77	10.974	11.264	5.383

Source: Authors' computations using WEO, July 2009 data

Notes: (1) The regional division is based on World Economic Outlook Database, july 2009 and IMF classifications;
(2) *Western Hemisphere* is composed of 32 countries, including *LAC* and other countries.
(3) Emerging and developing economies consist of 149 countries, including *BRIC.*.

Figure 2e. Workers' remittances, compensations of employees, and migrant transfers, credit: By Regions

(Data in the table are in US $ millions, the Right Scale is only All Developing Countries' Group)



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
East Asia and Pacific	3,228	3,792	4,333	5,453	6,633	9,526	10,142	14,489	12,244	14,912	15,675	18,757	27,468	32,695	40,336	50,460	57,598	71,309	86,115	84,785
Europe and Central Asia	3,246	2,819	3,160	3,253	8,091	7,206	9,728	9,373	13,170	11,072	12,143	11,647	12,844	14,418	20,955	30,089	37,341	50,777	57,801	49,279
Latin America and Caribbean	5,722	6,765	8,372	8,706	11,048	13,335	13,505	14,389	15,825	17,603	19,987	24,229	27,918	36,609	43,330	50,122	59,199	63,239	64,717	58,481
Middle-East and North Africa	11,393	12,750	15,832	15,209	14,076	13,319	12,517	12,809	13,052	12,800	12,898	14,653	15,211	20,361	23,034	24,958	26,112	31,364	34,696	32,212
South Asia	5,572	6,051	5,933	6,664	9,524	10,005	12,294	14,557	13,350	15,084	17,212	19,173	24,137	30,366	28,694	33,924	42,523	54,041	73,293	71,955
Sub-Saharan Africa	1,862	1,859	2,102	2,611	2,304	3,193	3,190	4,397	4,327	4,433	4,623	4,663	5,030	5,970	8,021	9,379	12,629	18,646	21,139	20,525
All developing countries	31,023	34,036	39,732	41,896	51,677	56,584	61,376	70,014	71,967	75,904	82,537	93,122	112,60	140,42	164,37	198,93	235,40	289,37	337,76	317,23

Source: Authors and World Bank staff estimates based on the International Monetary Fund's Balance of Payments Statistics Yearbook 2008.

Notes: (1) See Notes sheet for the country group classifications. (2) For a discussion of the definition of remittances, see Dilip Ratha, 2003, "Workers' Remittances: An Important and Stable Source of External Development Finance", Global Development Finance 2003, World Bank.

Figure 3

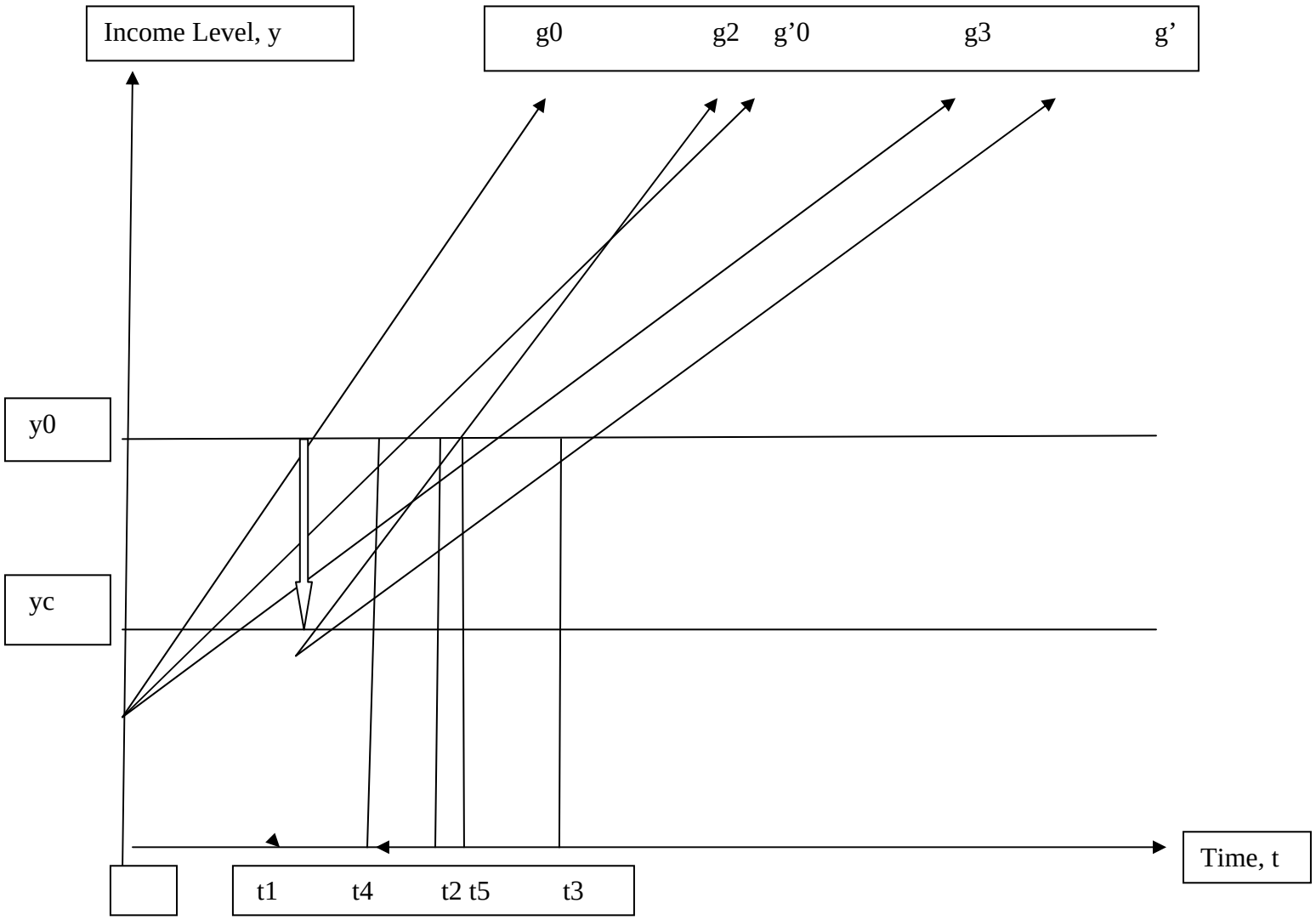


Table 1a: The size of the total current account balance of countries with surpluses (In % of the world Total CAS countries)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
US CAD ratio of Total CAS countries (%)	-72.7	-89	-99.3	-94.2	-79.4	-65.8	-62.3	-53.3	-44.4	-37.2	-37.2	-39.9
Japan CAS ratio of Total CAS countries (%)	27.6	25.5	22.7	23	20.7	18.1	14.2	11.5	12.8	8.7	15.9	16.1
China CAS ratio Total CAS countries (%)	5.1	4.4	4.5	7.2	7	7.2	13.7	16.1	20.2	20.1	30.7	29.4
Germany CAS ratio of Total CAS countries (%)	..	..	..	8.8	7.2	13.5	12.4	12.8	15.8	13.3	17.4	17.9

Source: Authors calculations using Authors and GEM (Global Economic Monitor) Database, DECPG, World Bank

Note: (1) Total CAS (Current Account Surpluses) Countries was computed as the sum of all the positive current account balances of the world's countries for a given year.

(2) CAD is the Current Account Deficit and CAS is the current account Surplus

Table 1b. Current account balance (as % of GDP)

Country Group Name/Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. USA	-3.2	-4.2	-3.9	-4.3	-4.7	-5.3	-5.9	-6	-5.2	-4.9	-2.6	-2.2
2. Newly industrialized Asian eco	5.7	3.5	4.6	4.9	6.7	6.3	5.3	5.5	5.7	4.4	6.4	5.9
3. European Union	-0.1	-1	-0.3	0.2	0.2	0.5	-0.1	-0.3	-0.5	-1.1	-0.8	-0.5
4. Emerging and developing econ	-0.3	1.4	0.7	1.2	2	2.5	4.2	5.2	4.3	3.9	2	2.8
5. Africa	-3.2	2	0.3	-1.8	-0.7	0.3	1.7	5.4	2.9	2.5	-3.1	-1.7
6. Central and eastern Europe	-4.1	-4.7	-2	-3	-4	-5.4	-5	-6.6	-7.9	-8	-3.1	-3.9
7. Commonwealth of Independent States	8.2	13.7	8	6.5	6.2	8.2	8.7	7.4	4.2	4.9	2.9	4.4
8. Developing Asia	1.9	1.8	1.6	2.5	2.8	2.7	4.2	6.1	7	5.9	5	5.2
9. ASEAN-5	6.3	5	3.9	3.7	4	2.9	2	4.8	4.9	2.6	3.4	2
10. Middle East	2.7	11.4	6.3	4.4	7.9	11.6	19.3	20.9	18.1	18.3	2.6	7.9
11. Western Hemisphere	-3	-2.3	-2.7	-0.9	0.5	1	1.3	1.5	0.4	-0.7	-0.8	-0.9
12. Germany	-1.3	-1.7	0	2	1.9	4.7	5.1	6.1	7.5	6.4	2.9	3.6

Source: IMF WEO 2009

Table 1c. Current Account Balances of selected Regions/Countries *(as % of World GDP)*

Year/Region	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1.United States	-0.96	-1.31	-1.21	-1.40	-1.41	-1.50	-1.62	-1.62	-1.33	-1.11	-0.72	-0.71
2.European Union	-0.04	-0.26	-0.08	0.06	0.05	0.16	-0.03	-0.12	-0.19	-0.32	-0.37	-0.33
3.Emerging & developing economies	-0.05	0.28	0.15	0.25	0.41	0.54	0.99	1.29	1.15	1.18	0.48	0.69
4.Central and eastern Europe	-0.07	-0.09	-0.03	-0.05	-0.08	-0.12	-0.12	-0.17	-0.22	-0.23	-0.11	-0.09
5.Developing Asia	0.12	0.12	0.12	0.20	0.22	0.21	0.36	0.58	0.74	0.70	0.88	0.84
6.Middle East	0.05	0.23	0.13	0.09	0.15	0.23	0.45	0.52	0.46	0.56	-0.02	0.10
7.China	0.05	0.06	0.05	0.11	0.12	0.16	0.35	0.52	0.67	0.70	0.65	0.75
8.Japan	0.37	0.37	0.28	0.34	0.37	0.41	0.37	0.35	0.38	0.26	0.17	0.17
9.Germany	-0.09	-0.10	0.00	0.12	0.12	0.31	0.32	0.37	0.46	0.39	0.13	0.13
10.Germany and Middle East	-0.04	0.12	0.13	0.21	0.28	0.54	0.77	0.89	0.92	0.95	0.11	0.23

Source: Authors calculations using WEO 09/2009

Table 2a. Housing Prices and Current Account Deficits

	Country	Real Housing Prices (as % change 2002-06)	CA Deficit2008 (as % GDP)		Country	Real Housing Prices (as % change 2002-06)	CA Deficit2008 (as % GDP)
1	Ukraine	230	-7.19	21	China	31	9.46
2	Estonia	150	-10.78	22	Thailand	29	3.06
3	Lithuania	130	-14.91	23	Australia	25	-4.92
4	Latvia	120	-15.12	24	Finland	25	3.39
5	South Africa	96	-7.96	25	Norway	25	19.13
6	Poland	66	-4.72	26	Italy	22	-2.78
7	New Zealand	65	-9.26	27	Serbia	20	-18.57
8	Iceland	55	-18.2	28	Argentina	15	0.82
9	Denmark	50	1.32	29	Czech Republic	13	-2.23
10	Spain	50	-10.05	30	Colombia	12	-2.19
11	France	48	-2.8	31	Netherlands	12	5.62
12	United States	45	-4.63	32	Switzerland	9	9.29
13	Belgium	42	0	33	Malaysia	5	14.8
14	Ireland	42	-4.98	34	Singapore	4	19.25
15	Canada	40	0.95	35	Austria	-3	2.81
16	Hong Kong	40	11.71	36	Philippines	-5	2.44
17	Hungary	40	-5.45	37	Indonesia	-7	0.1
18	Slovenia	40	-4.69	38	Germany	-15	7.31
19	Sweden	40	6.44	39	Japan	-25	4.01
20	United Kingdom	38	-3.64				

Source: Authors; The Economist Magazine, April 2009; and April 2009 WEO, IMF

Table 2b. Financial Sector Overview

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
1. Stocks traded, total value (% of GDP)										
United States	201.5	326.3	288.2	243.5	142.5	166.4	173.8	253.3	309.9	256.7
United Kingdom	93.4	126.5	128.9	120.7	121.1	171.0	185.5	176.6	372.5	245.1
China	34.8	60.2	33.9	22.9	29.1	38.7	26.2	61.5	230.4	126.5
East Asia & Pacific	33.7	49.8	29.3	21.7	28.4	36.3	25.9	52.3	184.1	104.4
Euro area	55.9	80.4	82.7	65.0	55.2	61.7	73.2	95.7	124.0	91.6
Europe & Central Asia	12.6	25.4	12.7	11.8	16.1	19.4	20.7	34.8	39.1	23.9
Latin America & Caribbean	8.1	8.5	6.1	5.0	5.4	7.6	9.9	12.9	24.1	24.7
Middle East & North Africa	5.3	5.1	2.4	2.3	3.7	7.3	15.9	19.1	18.8	19.0
South Asia	51.9	90.2	42.5	34.5	46.4	51.4	57.0	67.2	84.8	73.4
Sub-Saharan Africa	31.5	32.3	30.0	31.9	32.8	41.2	43.9	60.7		
World	99.6	152.4	134.6	116.3	81.6	95.8	106.6	140.5	185.5	137.4
2. Market capitalization of listed companies (% of GDP)										
United States	180.5	154.7	137.5	106.5	130.8	140.3	137.1	147.9	145.1	82.6
United Kingdom	198.8	177.6	149.9	117.8	134.7	129.9	136.1	157.9	139.2	70.0
China	30.5	48.5	39.5	31.9	41.5	33.1	34.9	91.3	184.1	64.6
East Asia & Pacific	42.6	47.1	42.2	35.9	46.7	40.2	40.6	84.9	158.9	58.3
Euro area	83.4	87.0	68.3	50.9	58.3	61.0	62.7	80.7	85.3	38.0
Europe & Central Asia	29.4	17.5	18.5	20.7	30.1	31.2	45.9	65.6	76.2	44.6
Latin America & Caribbean	32.8	31.8	32.5	25.4	29.7	35.6	40.5	49.1	70.8	31.6
Middle East & North Africa	27.9	19.9	17.9	20.3	27.7	37.1	47.9	48.1	56.0	34.9
South Asia	33.5	26.1	19.1	22.2	39.5	48.1	60.2	76.9	133.4	45.1
Sub-Saharan Africa	118.0	89.7	66.3	83.1	91.8	121.5	130.3	148.5		
World	118.3	102.3	89.4	72.5	87.6	92.6	97.5	111.1	120.7	59.4
3. Domestic credit to private sector (% of GDP)										
United States	179.3	170.7	178.9	169.2	184.2	191.2	195.3	202.4	210.1	190.5
United Kingdom	120.6	131.7	136.9	140.9	145.9	153.2	162.2	174.0	190.0	213.4
China	111.5	112.3	111.3	118.9	127.2	120.1	114.3	113.0	111.0	108.3
East Asia & Pacific	103.3	101.1	100.4	105.1	110.6	105.7	101.5	99.0	99.5	100.0
Euro area	93.7	97.9	99.5	99.8	101.9	103.9	109.2	114.9	121.4	126.3
Europe & Central Asia	16.9	17.4	18.2	18.6	20.5	23.0	26.3	32.2	38.9	43.1
Latin America & Caribbean	28.8	27.7	25.3	25.8	23.8	23.9	25.9	31.0	36.3	38.5
Middle East & North Africa	38.8	38.4	40.3	40.1	39.6	38.7	38.5	40.7	42.0	
South Asia	25.8	27.7	28.1	31.2	31.0	35.2	38.6	42.0	44.4	49.0
Sub-Saharan Africa	64.6	61.5	60.0	45.7	54.7	60.7	62.9	66.2	70.7	40.1
World	132.8	130.7	131.1	126.7	130.1	130.3	132.3	134.7	135.3	130.4

Source: Source: Authors calculations and WDI , World Bank, August 2009

Notes: Regions' divisions are based on WDI, February 2010, and World Bank country's groupings

1. Stocks traded refer to the total value of shares traded during the period. This indicator complements the market capitalization ratio by showing whether market size is matched by trading.

2. Market capitalization (also known as market value) is the share price times the number of shares outstanding. Listed domestic companies are the domestically incorporated companies listed on the country's stock exchanges at the end of the year. Listed companies does not include investment companies, mutual funds, or other collective investment vehicles.

3. Domestic credit to private sector refers to financial resources provided to the private sector, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. For some countries these claims include credit to public enterprises.

4. Domestic credit provided by the banking sector includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net.

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